National Institute of Environmental Health Sciences

Climate change and extreme heat events

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Abstract:

The association between climate change and the frequency and intensity of extreme heat events is now well established. General circulation models of climate change predict that heatwaves will become more frequent and intense, especially in the higher latitudes, affecting large metropolitan areas that are not well adapted to them. Exposure to extreme heat is already a significant public health problem and the primary cause of weather-related mortality in the U.S. This article reviews major epidemiologic risk factors associated with mortality from extreme heat exposure and discusses future drivers of heat-related mortality, including a warming climate, the urban heat island effect, and an aging population. In addition, it considers critical areas of an effective public health response including heat response plans, the use of remote sensing and GIS methodologies, and the importance of effective communications strategies.

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Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Air Pollution, Temperature

Air Pollution: Ozone, Particulate Matter

Temperature: Extreme Heat

Geographic Feature:

resource focuses on specific type of geography

Urban

Geographic Location:

resource focuses on specific location

United States

Health Impact:

specification of health effect or disease related to climate change exposure

Cardiovascular Effect, Injury, Morbidity/Mortality, Respiratory Effect, Other Health Impact

Cardiovascular Effect: Other Cardiovascular Effect

Cardiovascular Disease (other): cardiovascular hospital admissions

Respiratory Effect: Other Respiratory Effect

Respiratory Condition (other) : respiratory hospital admissions

Other Health Impact: heat cramps, heat syncope, heat exhaustion, heat stroke

Intervention: ☒

strategy to prepare for or reduce the impact of climate change on health

A focus of content

Mitigation/Adaptation: ☒

mitigation or adaptation strategy is a focus of resource

Adaptation

Model/Methodology: ☒

type of model used or methodology development is a focus of resource

Exposure Change Prediction, Outcome Change Prediction

Population of Concern: A focus of content

Population of Concern: ☒

populations at particular risk or vulnerability to climate change impacts

Elderly, Low Socioeconomic Status, Racial/Ethnic Subgroup

Other Racial/Ethnic Subgroup: minority populations

Other Vulnerable Population: adults with chronic disease, pre-existing medical conditions

Resource Type: ☒

format or standard characteristic of resource

Review

Resilience: ☒

capacity of an individual, community, or institution to dynamically and effectively respond or adapt to shifting climate impact circumstances while continuing to function

A focus of content

Timescale: ☒

time period studied

Long-Term (>50 years)

Vulnerability/Impact Assessment: ☒

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content